What is claimed is:

1. A traction unit, comprising: all the subsystems

a frame;

a plurality of trucks attached to the frame and operable to propel the frame across a surface;

a plurality of adherence members attached to and movable relative to the frame, and operable to releasably secure the frame to the surface, each adherence member including a foot attached to a body that is operable to extend the foot toward the surface and retract the foot from the surface; and

a plurality of return mechanisms attached to the frame and each operable to move a respective adherence member to a respective return position.

2. The traction unit of claim 1 wherein to maintain the frame a constant or substantially constant distance away from the surface.

3. The traction unit of claim 1 further comprising a control unit coupled to the adherence members and return mechanisms and operable to instruct the adherence members to extend and retract their feet and to instruct the return mechanism to move the adherence members.

4. The traction unit of claim 1 further comprising a control unit coupled to the adherence members and return mechanisms and operable to automatically instruct the adherence members to extend and retract their feet and to automatically instruct the return mechanisms to move the adherence members.

5. The traction unit of claim 1 wherein the frame includes two portions pivotally attached to each other.

6. The traction unit of claim 1 wherein the frame includes two portions each having a center axis and pivotally attached at their center axes.

7. The unit of claim 1 wherein:

the frame includes two portions equal or substantially equal in size and pivotally attached to each other, and each portion includes two sections equal or substantially equal in size; and

a respective truck, adherence member, and return mechanism are attached to each section.

8. The traction unit of claim 1 wherein the frame includes four quadrants and each truck and each adherence member is located within a respective one of the quadrants.

9. The traction unit of claim 1 wherein:

the frame includes two portions equal or substantially equal in size and pivotally attached to each other, each portion includes two sections equal or substantially equal in size and each section includes an outside corner and a center;

a respective truck is located at each outside corner; and

a respective adherence member is located at each center.

10. The traction unit of claim 1 wherein the frame is rectangular.

11. The traction unit of claim 1 wherein:

the frame includes two portions equal or substantially equal in size and pivotally attached to each other, each portion includes two outside corners and an interior;

a respective truck is located at each outside corner; and

two respective adherence members are located in each interior.

12. The traction unit of claim 1 wherein:

the frame includes two portions equal or substantially equal in size and pivotally attached to each other, each portion includes two outside corners and an interior;

a respective truck is located at each outside corner; and

three respective adherence members are located in each interior.

13. The traction unit of claim 1 wherein each truck is rotatably attached to the frame.

14. The traction unit of claim 1 wherein each truck extends away from the frame in the same direction.

15. The traction unit of claim 1 wherein each truck includes two wheels operable to contact and roll over the surface.

16. The unit of claim 1 wherein each truck includes:

a truck body attached to the frame;

an axle attached to the truck body; and

two wheels attached to the axle.

17. The unit of claim 1 wherein each truck includes:

a truck body attached to the frame;

an axle attached to the truck body;

two wheels attached to the axle; and

a motor connected to the wheels and operable to drive the wheels.

18. The traction unit of claim 1 wherein the adherence members are operable to increase the distance of the frame from the surface.

19. The traction unit of claim 1 wherein the frame includes a plurality of linear bearings each corresponding to a respective adherence member and operable to allow movement of the adherence member relative to the frame.

20. The traction unit of claim 1 wherein the adherence member is operable to pull the frame to the surface by applying a retracting force to the foot while the foot is attached to the surface.

21. The traction unit of claim 1 wherein the body includes an actuator having a rod that includes a first end protruding from the body and attached to the foot.

22. The traction unit of claim 1 wherein:

the foot includes a suction cup operable to generate a vacuum between the cup and the surface, and

the body includes an actuator having a rod that includes a first end protruding from the housing and attached to the suction cup.

28. The traction unit of claim 1 wherein each adherence member is movable within a translation zone.

29. The unit of claim 1 wherein the frame includes four translation zones each having limits, and a respective adherence member is movable within the translation zone.

30. The unit of claim 1 wherein the frame includes four translation zones each having a soft limit, and a respective adherence member is movable within the translation zone.

31. The unit of claim 1 wherein the frame includes four translation zones each having a center, a hard limit and a soft limit half the distance between the center and the hard limit, and a respective adherence member is movable within the translation zone.

32. The unit of claim 1 wherein each adherence member is movable within a translation zone that includes a center, and the return position is located at the center of the translation zone.

33. The traction unit of claim 1 wherein each return mechanism is operable to pull the adherence member to the return position.

34. The traction unit of claim 1 further comprising:

a control unit coupled to the adherence members and return mechanisms; and

wherein:

the frame includes a sensor that defines a soft limit within a translation zone and is operable to signal the location of the adherence member to the control unit when the adherence member crosses the limit, and

the control unit responds to the signal by instructing the adherence member to release the surface.

35. The traction unit of claim 1 further comprising a control unit coupled to the adherence members and return mechanisms wherein the control unit instructs each return mechanism to move the corresponding adherence member to the respective return position, and after a predetermined duration instructs the return mechanism to stop moving the corresponding adherence member.

36. The traction unit of claim 1 further comprising a steering mechanism operable to rotate the trucks.

37. The traction unit of claim 1 further comprising a steering mechanism operable to rotate each truck independent of the other trucks.

38. The traction unit of claim 1 further comprising two steering mechanisms and wherein the frame includes:

two portions equal or substantially equal in size and pivotally attached to each other, each portion includes two sections equal or substantially equal in size and each section includes an outside corner that locates one truck, and

wherein one of the steering mechanisms is operably connected to the trucks in one portion and the other steering mechanism is operably connected to the trucks in the other portion.

39. The traction unit of claim 1 wherein the foot includes a suction cup operable to create a vacuum between the surface and the cup, and the control unit is operable to determine an orientation of the adherence members relative to a gravitational field and adjust the vacuum of the suction cup to compensate for the orientation.

40. The traction unit of claim 1 wherein the adherence member is operable to pull the frame to the surface by applying a retracting force to the foot while the foot is attached to the surface, and the control unit is operable to determine an orientation of the adherence members relative to a gravitational field and adjust the retraction force applied to the foot to compensate for the orientation.

41. A method of traversing a surface, comprising in the following order:

attaching a foot to the surface;

pulling a frame against the surface by pulling the foot and frame toward one another;

moving the frame relative to the attached foot;

releasing the foot from the surface; and

moving the released foot to a return position.

42. The method of claim 41 further comprising pulling the frame against the surface by pulling an attached foot and the frame toward each other at all time while the frame traverses the surface.

43. The method of claim 41 wherein attaching the foot to the surface includes generating a vacuum between the foot and the surface.